



National Transportation Safety Board Aviation Incident Final Report

Location:	MEDFORD, OR	Incident Number:	LAX93IA029
Date & Time:	11/05/1992, 0230 PST	Registration:	N131AF
Aircraft:	PIPER PA-31T-620	Aircraft Damage:	None
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

DURING CRUISE FLIGHT AT FLIGHT LEVEL 230, THE AIRPLANE SUDDENLY PITCHED UP AND THE AUTOPILOT DISENGAGED. THE PILOT WAS UNABLE TO CONTROL THE AIRPLANE WITH THE CONTROL YOKE. USING POWER AND TRIM CONTROL, HE FINALLY REGAINED CONTROL OF THE AIRPLANE AND MADE AN EMERGENCY LANDING AT SACRAMENTO WITHOUT FURTHER INCIDENT. INVESTIGATION REVEALED THAT THE THREADED PORTION OF THE ROD END BEARING, P/N 49261-02, HAD SEPARATED AT THE POINT WHERE THE THREADS ARE INSERTED INTO THE AFT END OF THE ELEVATOR CONTROL TUBE ASSEMBLY, P/N 40847-07. THE ELEVATOR CONTROL TUBE CONNECTS TO THE ELEVATOR PITCH HORN. METALLURGICAL EXAMINATION SHOWED THAT THE SEPARATION WAS DUE TO A FATIGUE FAILURE. THE AIRCRAFT HAD BEEN INSPECTED AT 37 HRS AND 134 HRS BEFORE THE INCIDENT IN ACCORDANCE WITH AN APPROVED AIRCRAFT INSPECTION PROGRAM. NEITHER INSPECTION SPECIFICALLY ADDRESSED AN INSPECTION OF THE ELEVATOR CONTROL TUBE ASSEMBLY.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this incident to be: FATIGUE FAILURE OF THE ELEVATOR CONTROL TUBE ROD END BEARING RESULTING IN A LOSS OF ELEVATOR CONTROL.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION

Phase of Operation: CRUISE - NORMAL

Findings

1. (C) FLT CONTROL SYST,ELEVATOR CONTROL - FATIGUE

Occurrence #2: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: CRUISE - NORMAL

Findings

2. (C) FLT CONTROL SYST,ELEVATOR CONTROL - DISCONNECTED

Factual Information

Pilot Information

Certificate:	Airline Transport; Flight Instructor	Age:	25, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	06/01/1992
Occupational Pilot:	Last Flight Review or Equivalent:		
Flight Time:	4813 hours (Total, all aircraft), 280 hours (Total, this make and model), 4588 hours (Pilot In Command, all aircraft), 301 hours (Last 90 days, all aircraft), 100 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	PIPER	Registration:	N131AF
Model/Series:	PA-31T-620 PA-31T-620	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	31T-7820005
Landing Gear Type:	Retractable - Tricycle	Seats:	2
Date/Type of Last Inspection:	10/26/1992, AAIP	Certified Max Gross Wt.:	9000 lbs
Time Since Last Inspection:	37 Hours	Engines:	2 Turbo Prop
Airframe Total Time:	12097 Hours	Engine Manufacturer:	P&W
ELT:	Installed, not activated	Engine Model/Series:	PT6A-28
Registered Owner:	AMERIFLIGHT INC.	Rated Power:	620 hp
Operator:	AMERIFLIGHT INC.	Operating Certificate(s) Held:	On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	JIKA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	, 0 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	0000	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear / 0 ft agl	Visibility	75 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	20 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	340°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	-8° C
Precipitation and Obscuration:			
Departure Point:	PORTLAND, OR (PDX)	Type of Flight Plan Filed:	IFR
Destination:	OAKLAND, CA (OAK)	Type of Clearance:	IFR
Departure Time:	0200 PST	Type of Airspace:	Class A

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	None
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	SCOTT R ERICKSON	Report Date:	08/24/1993
Additional Participating Persons:	DON ENGELSMAN; SACRAMENTO, CA		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinquiry@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).